Ordering number : EN 4020A

Monolithic Linear IC

SANYO

No.4020A

LA7151, 7151M

Audio / Video Switch for VCR Video Camera Use

Overview

The LA7151 and LA7151M are high-performance, dual-channel audio/video switches designed for video camera applications.

The LA7151 and LA7151M have a wide bandwidth, low supply current and a large dynamic range, making them ideal for low-power or battery operated equipment.

The LA7151 and LA7151M operate from a 4.5 to 12.5 V supply and are available in 12-pin SIPs and 10-pin MFPs, respectively.

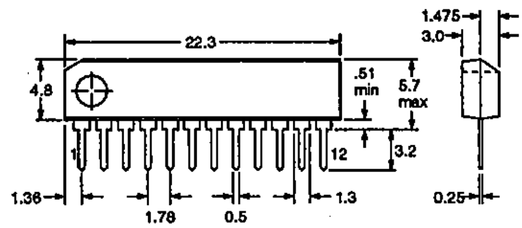
Features

- Two, separately controllable switch circuits
- 50 kΩ input impedance
- Low supply current
- Large dynamic range
- Wide bandwidth
- 4.5 to 12.5 V supply voltage
- 12-pin SIP (LA7151) and 10-pin MFP (LA7151M)

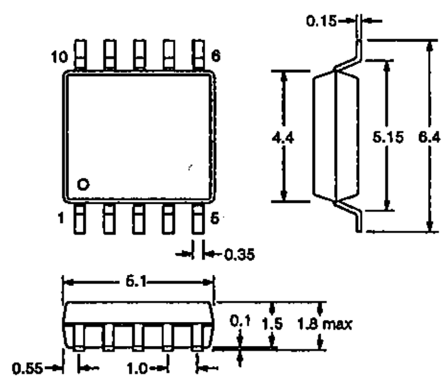
Package Dimensions

Unit: mm

3116-SIP12S (LA7151)

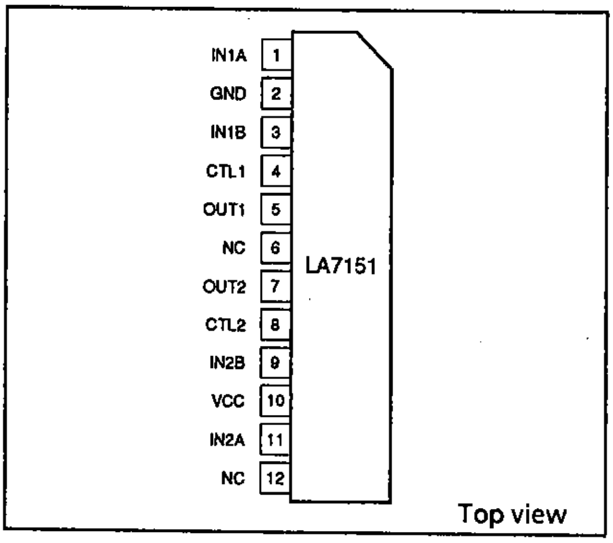


3086A-MFP10S (LA7151M)

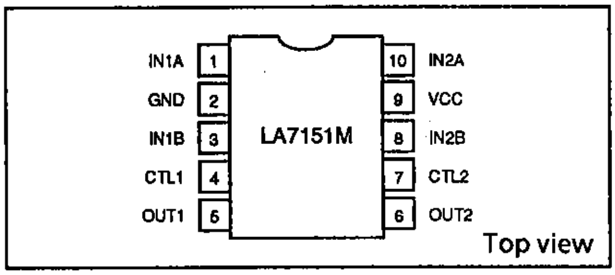


Pin Assignments

LA7151

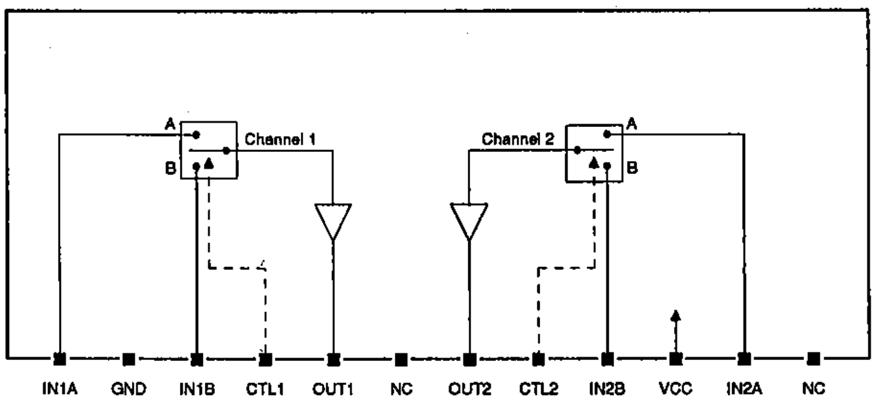


LA7151M

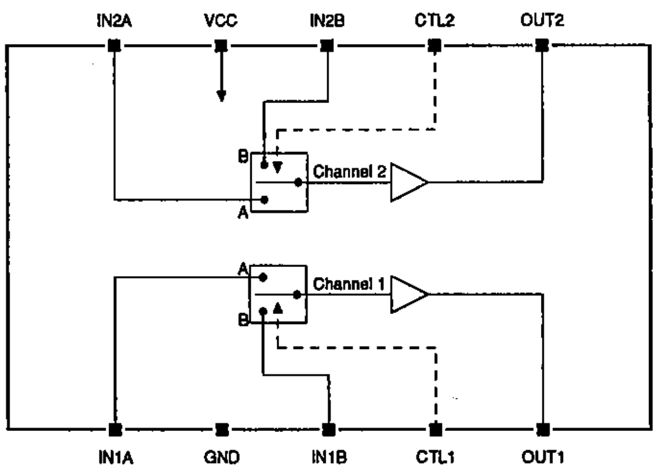


Block Diagrams

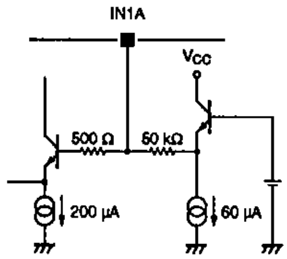
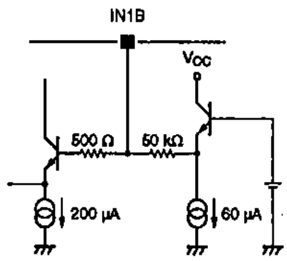
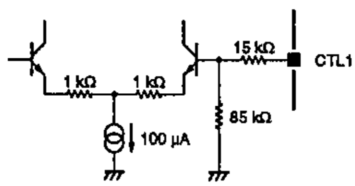
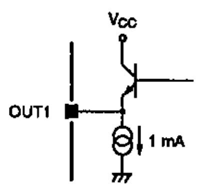
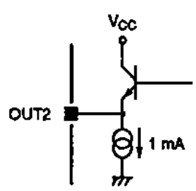
LA7151

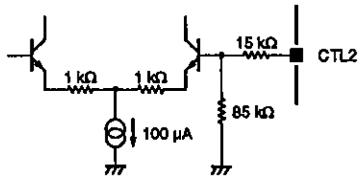
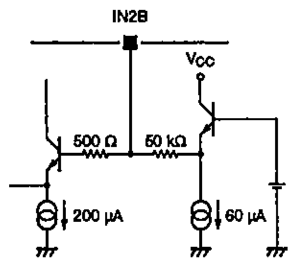
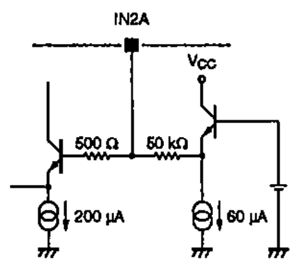


LA7151M



Pin Functions

Number		Name	Equivalent circuit	Description
SIP12	DIP10			
1	1	IN1A		Channel 1 input A
2	2	GND		Ground
3	3	IN1B		Channel 1 input B
4	4	CTL1		Channel 1 control input
5	5	OUT1		Channel 1 output
6	-	NC		No connection
7	6	OUT2		Channel 2 output

Number		Name	Equivalent circuit	Description
SIP12	DIP10			
8	7	CTL2		Channel 2 control input
9	8	IN2B		Channel 2 input B
10	9	VCC		Voltage supply
11	10	IN2A		Channel 2 input A
12	-	NC		No connection

Specifications

Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Supply voltage	V_{CC}	15	V
Power dissipation	P_D	150	mW
Operating temperature range	Topr	–20 to +80	°C
Storage temperature range	T_{stg}	–55 to +150	°C

Recommended Operating Conditions

T_a = 25 °C

Parameter	Symbol	Rating	Unit
Supply voltage	V_{CC}	5	V
Supply voltage range	V_{CC}	4.5 to 12.5	V

Electrical Characteristics

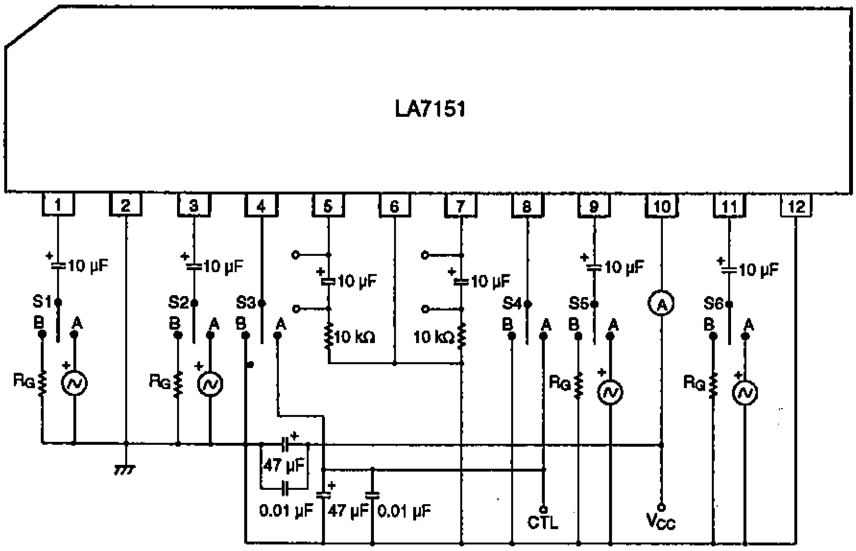
V_{CC} = 5 V, T_a = 25 °C

Parameter	Symbol	Condition	Rating			Unit
			min	typ	max	
Supply current	I_{CC}	No input, V_{CC} = 5 V	5.5	7.0	8.5	mA
		No input, V_{CC} = 9 V	6.0	7.5	9.0	
		No input, V_{CC} = 12 V	6.5	8.0	9.5	
Total harmonic distortion	THD	V_{IN} = 1 V_{P-P}, f = 1 kHz	–	0.006	0.1	%
Second-harmonic distortion	H_2	V_{IN} = 2 V_{P-P}, f = 4.43 MHz	–	–50	–40	dB
Third-harmonic distortion	H_3	V_{IN} = 2 V_{P-P}, f = 4.43 MHz	–	–55	–45	dB
Maximum output voltage	V_{OM}	f = 1 kHz, THD = 1%	2.2	2.5	–	V_{P-P}
Output noise voltage	V_{ON}	R_g = 600 Ω, DIN AUDIO filter	–	–110	–100	dB
Crosstalk between switches	CT_S	R_g = 50 Ω, V_{IN} = 2 V_{P-P}, f = 4.43 MHz, measured between switches A and B	–	–60	–55	dB
Crosstalk between channels	CT_C	R_g = 50 Ω, V_{IN} = 2 V_{P-P}, f = 4.43 MHz, measured between channels 1 and 2	–	–65	–60	dB
Frequency characteristic	G_f	V_{IN} = 2 V_{P-P}, f = 100 kHz/10 MHz	–1	0	1	dB
Voltage gain	VG	V_{IN} = 2 V_{P-P}, f = 4.43 MHz	–0.3	0	0.3	dB
Output differential between A and B channels	V_{OS}		–30	0	30	mV
CTL1 and CTL2 LOW-level input voltage	V_{CB}	Measured at CTL1 and CTL2	0	–	1.5	V
CTL1 and CTL2 HIGH-level input voltage	V_{CA}	Measured at CTL1 and CTL2	3.5	–	5.0	V
Input impedance	Z_{IN}		–	50	–	kΩ
Output impedance	Z_{OUT}		–	10	–	Ω

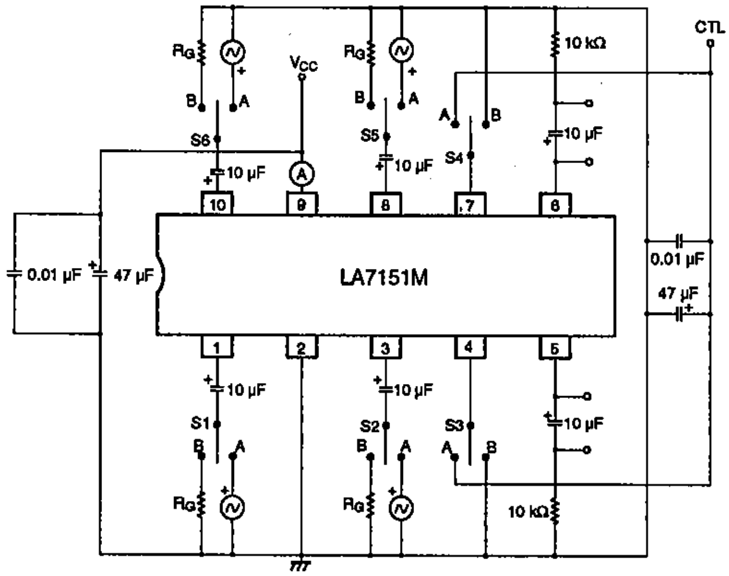
This catalog provides information as of **December, 1996.** Specifications and information herein are subject to change without notice.

Test Circuit

LA7151



LA7151M



Channel Selection

CTL1	CTL2	Selected Input	
		CH1	CH2
LOW	LOW	B	B
LOW	HIGH	B	A
HIGH	LOW	A	B
HIGH	HIGH	A	A